Quiz Tool

Report Name	Outline Project Specification
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1 Project description

Student engagement and live knowledge monitoring are vital in the provision of good quality lecture content in 2018. It is important to make sure audience understands concepts presented, and quizes can help lecturers judge students' understanding in real time.

Aberystwyth University currently uses Qwizdom live polling tool during the provision of some lectures and practical sessions. The university operates under a single license forcing lecturers to book sessions before they can use the tool. Due to human nature, session hijacking occasionally occurs to the bemusement of both students and lecturers. For example, students could be shown biology slides half way through their geography lecture.

This project will focus on the design and development of an in-house built Quiz Tool, enabling multiple lecturers to use it at the same time and potentially making Qwizdom redundant in the future. This ambition can only be achieved if the project is of high quality and its future maintainability is considered at all stages of the design and development.

The Quiz Tool will allow lecturers to login with their university credentials and they will be authenticated using the university LDAP. Lecturers will then be able to upload their PDF lecture slides and create *Lectures* in the system. Each *Lecture* can be then edited and quizes can be added between slides. An example of a quiz would be an "ABC style" question where a student can select one of the options and submit their answer. Once a lecturer is happy with their *Lecture*, he can broadcast it and receive a session key which can be shared with students. Lecture slides will be shown to all students and the lecture can be delivered in a traditional fashion up to the moment a quiz has been embedded beteen two slides. Students will then be able to answer the question and polling results will be presented in real time to a lecturer. It will be also possible to export the quiz answers as JSON for future analysis.

The tool will be composed of the back-end with an associated database, and two front ends. One for lecturers and one for students. Finally, the tool will be developed using an agile methodology, adjusted for a single person project.

2 Proposed tasks

1. Running within the aber intranet or not 2. External cloud provider vs local debian container 3. Authentication concerns -¿ how to access LDAP from the outside of the university network 4. Technology used 5. Angular 4 investigation 6. Real time nature of the project 7. Continuos delivery 8. Setting up the version control with suitable safe-guards 9. Agile methodology 10. Use of Docker 11. docker-compose vs kubernetes 12. Persistence and backups of the MongoDB container

3 Project deliverables

1. Containerised back-end consisting of an Express app with a MongoDB persistence layer 2. Containerised front-end in Angular 4 for lecturers and students 3. Final project